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DR. LETTSOM's

OBSERVATIONS

ON THE

COW-POCK.

THE SECOND EDITION.

Observations

on the

COW-POCK;

By John Coakley Lettsom M.&L.L.D.

Member of several Academies and Literary Societies.

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PREFACE.

INDIVIDUALS, in the intercourſe of ſociety, however limited the circle may be, gradually form mutual attachments, which beget mutual confidence; and hence the opinions of one perſon determine thoſe of another; a ſentiment that encourages me to write upon a ſubject, although anticipated by ſeveral diſtinguiſhed authors, under the perſuaſion, that my teſtimony may have ſome influence within the periphery of my aſſociates and particular friends; ſome of whom, reſident in different parts of the world, have requeſted my opinion reſpecting the inoculation of the Cow-pock, with ſome account of the inſtitutions eſtabliſhed in this country for promoting the general practice of it; and I hope their laudable wiſhes will be gratified by the peruſal of the ſubſequent obſervations.

If theſe afford no novelty of relation, the reader will have the pleaſure of poſſeſsing engraved likeneſſes of gentlemen highly diſtinguiſhed in medical ſcience, and, in a particular manner, in the knowledge of the intereſting diſcovery I have preſumed to diſcuſs. The contemplation of the reſemblance merely of a great character, excites in the mind, a ſpirit of laudable emulation; and may ſtimulate latent powers, that might otherwiſe remain dormant, to cultivate purſuits equally conducive to private happineſs and public good.

Of the firſt edition of this little treatiſe only 100 copies were printed, in quarto; not for ſale, but for the uſe of the Author and his friends.

OBSER-

OBSERVATIONS

ON THE

COW-POCK.

A JUDICIOUS Phyſician, who has long and attentively cultivated medicine, muſt have witneſſed the riſe and progreſs of various ſyſtems, and ſpeculative opinions of its profeſſors; but, whilſt experience enables him to appreciate theſe opinions, his judgment will not bias him againſt the reception and encouragement of medical diſcoveries and improvements. Under ſuch ſentiments I have been

led to pay particular attention to a ſubject, which forms a new æra in practical medicine, and a new ſource of human felicity, if not of human exiſtence; and, as I have been requeſted, by many profeſsional and other reſpectable characters, to deliver my opinion on this important ſubject, as likely to influence their conduct, I have deemed it my duty to declare my ſentiments, however ſuperfluous they may be conſidered by others, after the communications of JENNER, WOODVILLE, PEARSON, RING, WATERHOUSE, ADDINGTON, and AIKIN.

An animal whoſe lactarious fountains afford in our infancy a ſubſtitute for that of the parent, and from which we draw, through life, a conſiderable portion of our nutriment, is deſtined by the ſagacity of one enlightened philoſopher to protect the human ſpecies from the moſt loathſome and noxious diſeaſe to which it is ſubjected. In reflecting upon its ravages, the mind revolts with horror; not merely from its fatal devaſtation, but likewiſe from the deformity it inflicts upon its victims, by rendering the faireſt ſublunary being, that god-like

E. Jenner. M.D. F.R.S &c.

god-like countenance impreſſed by the Creator, an object of compaſsion, if not of diſguſt. I contemplate, therefore, with medical pride, and not leſs with national gratitude, the name and diſcovery of Dr. EDWARD JENNER*; by

* Although the Cow-pock had long ſince been found by incidental experience a ſecurity againſt the ſmall-pox, it had never been applied to any beneficial purpoſe, till the genius of Jenner diſcriminated its powers, and introduced it into practice, as a permanent ſecurity againſt the variolous infection. This preventive quality of the vaccine fluid was certainly known even to ſcientific profeſſional men many years ago; but, ſtrange as it may now appear, no one till Jenner promulgated his diſcovery had ever improved that knowledge, by applying it to the proceſs of inoculation. About twenty years ago, when Dr. Archer was the phyſician of the hoſpital for inoculation, Catharine Wilkins, now Titchenor, from Cricklade, in Wiltſhire, who had had the Cow-pock in conſequence of milking cows, came to her brother in London, (where ſhe is now reſident,) who, being deſirous of aſcertaining whether this circumſtance could be depended upon as preventive of the ſmall-pox, ſent her to the hoſpital for inoculation, when ſhe received the variolous matter from Dr. Archer; againſt which, however, ſhe was proof, and the ſmall-pox of courſe could not be communicated; but no advantage was derived from this fact.

Archer was a prudent, cautious, and rather timid practitioner; and the hoſpital for inoculation owes much of its

who by conveying from a ſmall puſtule on the teats or nipples of the udder of the domeſtic cow, a particle of matter, under the cuticle of the human ſubject, has eſtabliſhed the divine art of preventing the ravages, and even the appearance, of that ſcourge of his exiſtence, the ſmall-pox.

From time immemorial this domeſtic animal has been conſecrated among antient nations as an object of worſhip *; to all it is now an object of grateful admiration. What then is due to that philoſopher, who has drawn new and heretofore unexplored ſources of happineſs from this ſalutiferous animal! Gratitude calls upon the nation for a national reward; and great indeed would it be, were it adequate to the national good that muſt reſult from this wonderful diſcovery, which embraces at once the following axioms:

importance to his perſevering attention to its intereſts; but he neither poſſeſſed the ſpirit of penetrating inquiry of Woodville; nor the genius of diſcovery of that man, who was deſtined to form a new æra in medical practice.

* Hence I have introduced it in the frontiſpiece, under its ſacred character.

I. It

I. It prevents the acceſsion of the moſt fatal malady under heaven—the variolous infection.

II. It is not infectious or contagious.

III. It is believed, that it never has been fatal, and never will be.

IV. It creates no blemiſh, or mark, on the human frame.

V. It conveys no conſtitutional diſeaſe.

It has indeed been calculated that, of 60,000 perſons who have been inoculated with the Cow-pock, four have died. I cannot bring my imagination, from the experience I have had, to conceive, that any healthy ſubject can die of a proceſs which can hardly be called a diſeaſe; or, in other words, that a ſingle puſtule (for there is rarely more) can prove fatal. Prejudice or ignorance have given riſe to various reports, which inquiry has proved unfounded. It muſt, however,

be acknowledged, that many miſtakes have been committed by practitioners; matter has been taken from the chicken-pox *(varicellæ)*, and too frequently from the purulent fluid round the ſcab of the Cow-pock, or in the variolous puſtule; and in either caſe it is needleſs to ſay, inoculation under ſuch circumſtances is no ſecurity againſt the ſmall-pox.

But, ſuppoſing four might have died in 60,000 perſons inoculated by the Cow-pock, it can hardly afford an argument againſt the practice; for if we calculate, that the proceſs of the eruption, &c. may occupy fourteen days, who would enſure 60,000 healthy perſons for fourteen days, under the chance of no more than four dying in that period?

It is not in vaccine inoculation alone that miſtakes have been committed, even by practitioners of eſtabliſhed character. I lately attended two young perſons under the ſmall-pox, each an only child, of conſiderable family, who had been inoculated two or three

years

years before by reſpectable gentlemen; and the mothers of the children ſhewed me what they conceived to be the marks or pitting from the inoculated ſmall-pox: happily, they both recovered from an alarming eruption of the diſeaſe; but two relations I once claimed, who were inoculated with matter ſuppoſed to be variolous, by an eminent inoculator, afterwards caught the ſmall-pox, on one of whom it proved fatal. Theſe inſtances of error, ſo injurious to the medical character, and diſtreſsing to the community, ſhould excite the moſt guarded circumſpection in the profeſſors of the healing art.

Condamine, in deſcribing the ſuperior ſafety of variolous inoculation, compared with the natural infection; repreſents the latter as a rapid river, which every individual is liable to paſs over; and the former to a boat, which each may avail himſelf of, to enſure a ſafe paſſage; whilſt thoſe who do not embrace this conveyance muſt incur the riſk of plunging into this dangerous current. If this alluſion exhibit the ſuperior advantages of vario-

lous, may we not ſubſtitute an adamantine bridge in favour of vaccine inoculation?

The higheſt honours have been conferred on heroes both antient and modern, who have deſolated provinces by the deſtruction of their fellow creatures: trophies and ſtatues have been erected to commemorate ſanguinary deeds. Saul may have boaſted of his thouſands ſlain, and David of his ten thouſands; but the altar of JENNER is not conſecrated by hecatombs of the ſlain; his claim is that of having multiplied the human race, and happily invoked the goddeſs of health, to arreſt the arm that ſcatters peſtilence and death over the creation!

All Europe is now convinced of the ſalutary reſult of vaccine inoculation. In Aſia, Africa, and America likewiſe, wherever it has been practiſed, it has arreſted the progreſs of the ſmall-pox; at the ſame time, in this ſalutary proceſs, it occaſions no ſerious diſeaſe itſelf. The moſt unequivocal and unbiaſſed relations, from various parts of the European

ropean and American continents, atteſt theſe facts; even France, ſupine perhaps at firſt in appreciating the value of this diſcovery, has at length participated in the general acclamation of its ineſtimable benefits, as appears by a paper inſerted in the Moniteur of the 11th Ventoſe, 1801, as *a letter addreſſed to the reſpective mayors of the twelve diſtricts of Paris*, by the Medical Committee of that city, in which it is obſerved:

"That the vaccinated have been inceſſantly expoſed to the contagion of the ſmall-pox, even by ſleeping in the ſame bed, and eating and drinking out of the ſame veſſels without any effect *. More than ſeventy-two have been inoculated for the ſmall-pox, yet none have taken the infection †.

* Children ſucking, under the vaccine diſeaſe, do not infect their mothers, who have not had it; nor the mothers the children.

† In England, and other parts, the number may be extended to full 50,000, or even perhaps double that number at this time.

"The

" The Committee have thus by numerous experiments, verified the obſervations of the Engliſh phyſicians; and is convinced of the truth of the three principal ſtatements:

I. That the vaccine is a very ſlight diſeaſe.

II. That it is not contagious.

III. That it is an effectual preſervative againſt the ſmall-pox.

" The Committee is preparing a report, in which, as well as rendering an account of its own labour, it will demonſtrate theſe great truths; and eſtabliſh the public opinion with reſpect to *the moſt brilliant, and the moſt important diſcovery of the eighteenth century; to which France, Europe, and the whole world, will be indebted to the annihilation of that moſt deſtructive ſcourge, which has ravaged and deſolated it for ſo many centuries.*"

Our Gallic neighbours, with whom a warm imagination is a prominent paſsion, in ſpeaking of the Jennerian diſcovery, as the moſt brilliant

brilliant of the eighteenth century, have expreſſed a ſentiment inadequate to its magnitude; as it is believed to be the greateſt diſcovery in antient or modern hiſtory. I may be deemed an enthuſiaſt in my opinion; but if he, who is able to exhibit a more momentous diſcovery, is alone permitted to apply this epithet, I may challenge the *imputation* with impunity. If we appreciate the importance of the diſcoveries of *Gunpowder*, *Printing*, the *Mariner's Compaſs*, and the *Circulation of the blood*, the JENNERIAN DISCOVERY will ſtill diſplay a prominent æra in the contemplation and gratitude of poſterity.

Ye *Literati*, under the deſignation of Reviewers and Critics, whoſe penetrating eye pervades the ample circle of ſcience; and whoſe deciſions impoſe a tone upon public opinion, and widely influence even the judgment of every reflecting mind; in proportion to that influence, ought you to ſtand forward upon this intereſting occaſion.—Not with that cold approbation, bordering upon indifference, if not apathy, which has been painfully

fully noticed in ſome of your criticiſms; but with an impreſsive ardour adequate to the imperious neceſsity of animating the multitude to ſelf-preſervation.

When Herſchell fixed the ſite of the Georgium Sidus in the great volume of the heavens, you raiſed the theme of ardent praiſe to this unrivalled aſtronomer; but what is the Georgium Sidus, in competition with the Jennerian diſcovery! Has it conveyed to one human being a ſingle ray of advantage? Contemplate with impartiality the latter, whoſe beneficent rays are deſtined to diſsipate the gloomy atmoſphere of peſtilential mortality; whoſe fatal victims, I am bold to ſuggeſt, amount to 210,000 annually in Europe alone! Does this reflection admit of a coldneſs of deſcription? Dip your pens in æthereal and indelible ink!—Impreſs your obſervations in characters legible to the moſt diſtant regions of the globe!

Ye

Ye *Paſtors*, whoſe congregations liſten to you for information; may a retroſpection of the ravages of the ſmall-pox, and the proſpect of its extinction by the vaccine inoculation, excite your piety to promote the ſalutary practice in public and private! As the Creator, it is believed, gave exiſtence to rational beings, in order to augment rational happineſs; may you co-operate in forwarding this benign purpoſe, by inculcating the duties of ſelf-preſervation! and,

Ye *Parents*, who are the natural guardians of your offspring, do not heſitate in adopting a proceſs that exempts them from variolous contagion, and its frequent concomitant, death; when you read in the bills of mortality, the weekly returns of its victims, in numbers from forty to fifty; and reflect, that each of them might have been living objects of affection to their parents, and of national benefit to the ſtate, had their guardians embraced the ſalutary diſcovery I allude to! Not a day paſſeth in this metropolis, without witneſsing the immolation of infants ſacrificed by

by this contagion *! And ſhall they not excite one pang of remorſe to ſurviving guardians; on reflecting, that with as much ſecurity as they paſs through the chambers of their houſes, might theſe infants have eſcaped the valley of the ſhadow of death! I do not heſitate to declare, that I never enter the habitations of the rich or the poor (for each may be equally uſeful in their reſpective allotments) without feeling an ardent deſire for the ſecurity of their infantile denizens, againſt this moſt deſtructive diſeaſe.

Mothers! Your infants cannot reaſon for themſelves, but they call upon your protection, by every tender and winning geſture. How have you been delighted, when their playful hands inſtinctively preſs your boſoms, to ſolicit the flow of that nutritive fluid that percolates from your heart's blood, and adds to theirs! When they look up to you with ſmiling innocence, how ardently you preſs their

* About 8,000 children annually die in London under four years of age; chiefly occaſioned by the ſmall-pox!

lips

lips with careſſes and kiſſes! With ardour I invoke you to ſhield their endearing features with the *ægis* of Jenner.

In ſpite of the moſt obvious and uniform ſucceſs of vaccine inoculation, individuals have oppoſed the practice from a refinement of reaſoning, that on the other hand appears to be rather concluſive in its favour; they have objected to it on account of its origin, and conferred upon it the epithet of a beaſtly diſeaſe, and branded its promoters, as being poſſeſſed with the cow-mania *. Of the primary ſources of infectious diſeaſes, little is yet clearly aſcertained; that ſome have originated from animals is certain; but, of all animals, the cow is moſt congenial to the habits of man; its food is ſimple, and its diſeaſes

* I am truly ſorry that my friend Dr. Moſeley, whoſe learning and extenſive practice muſt greatly influence the public opinion, ſhould have adopted ſuch an expreſſion, or in the leaſt degree diſcouraged the moſt important, brilliant, and ſalutary diſcovery, in the annals of the eighteenth century. Probably he may have formed his opinion from ſome miſtakes he might have witneſſed in the early practice of vaccine inoculation.

are few: we are from infancy nouriſhed by its milk, and its fleſh conſtitutes a large portion of human aliment; and ſurely a particle of matter extracted from this almoſt ſacred animal, can excite no diſguſt, or rational idea of impurity; whilſt that of man, too often the creature of appetite and morbid indulgence, with juices vitiated by intemperance, and a conſtitution injured by vice, may indeed afford ſome ſuſpicion of contamination and impurity.

The Cow-pock, this eruptive affection of the nipples of the cow, which I attempt to elucidate, has long exiſted in various parts of the counties of Glouceſter, Wilts, Somerſet, Buckingham, Devon, Hants, Suffolk, Norfolk, Leiceſter, Stafford, and vicinity of London; and, in ſome parts, long and well known as a preventive of the ſmall-pox; but it was not employed in medical practice, as has been intimated, till Dr. Jenner introduced it to the knowledge of the publick; and by whom it was even ſuſpected to originate from a ſuppurative eruption, or the greaſe, ſo called,

led, a diſeaſe liable to appear on the heel of the horſe.

However dubious this hypotheſis may be, it is of ſerious importance to know, that the udder and teats of the cow are affected with ulcerations totally different from the Cow-pock; and conſequently, to diſcriminate with preciſion the genuine appearance of the latter, which is beſt aſcertained by actual obſervation, as many miſtakes have occurred by ſubſtituting the chicken-pock and other eruptive affections, as has been already obſerved. The Cow-pock is diſtinguiſhed from the ſlighter ſores of the udder, by a tendency to produce a deep hollow ſore, and differs from the other ulcerations of this organ, by a livid blueneſs, which commonly attends it, and which experience will alone effectually diſtinguiſh. The matter or fluid of the Cow-pock is introduced by inoculation, in its recent ſtate, in the ſame manner as the variolous; and it ſhould alſo be introduced by the ſmalleſt poſsible puncture. Its progreſs is likewiſe very ſimilar: in about two days a

ſmall reddiſh eminence is viſible; this increaſes in ſize, becomes hard, and by the ſixth day acquires a bluiſh, or light crimſon circle about half an inch in diameter, with a diſcoloured ſpeck, puſtule, or rather veſicle, in the centre, ſomewhat leſs than a pea; this circle, or areola, progreſsively increaſes till the eleventh or twelfth day; after which it gradually vaniſhes.

About the eighth day, a ſlight ſenſation of pain in the inoculated part, and arm-pit, takes place, with a little ſhivering, head-ach, and feveriſhneſs. Theſe uſually ſubſide ſpontaneouſly in a day or two, little or no confinement or reſtraint being requiſite; and indeed, in general, very little indiſpoſition whatever is obſervable. The pains, however, in the inoculated part is ſometimes troubleſome, with conſiderable inflammation, whilſt the puſtular or veſicular part is ſurrounded with a broad circular margin; which, with the preceding ſymptoms, indicate, that the ſyſtem is affected by the vaccine matter. Soon after this period, that is, about the 12th or 13th day, the fluid

in

in the veſicle gradually dries up, and the veſicle itſelf, or puſtule, forms a dark-coloured hard ſcab, which adheres ſeveral days, unleſs pulled off. Sometimes one or more ſmaller ſpots appear on different parts of the body, but in general there is only a ſolitary puſtule, where the vaccine fluid had been inſerted.

Fluid for inoculating other ſubjects may be taken, from the ſixth to the tenth day of the eruption: when taken early, that is, about the fifth, ſixth, or ſeventh days, it is ſuppoſed to be more active, and more certainly to be depended upon for propagating the diſeaſe *. After the tenth day, the puſtule is uſually formed into too dry a ſcab to afford matter for inoculation.

By this curſory relation of the progreſs of the vaccine, a conſiderable ſimilarity with that of the variolous inoculation muſt be perceived; the eruption of the former, however, reſembles more a watery veſicle, no ſuppu-

* This will be confirmed by Dr. Jenner's opinion, quoted in a ſubſequent page.

ration in general taking place; whilſt the matter of the ſmall-pox is purulent, and the puſtule itſelf has the character of phlegmonic inflammation. The greateſt diſsimilitude appears in one being infectious and dangerous, whilſt the vaccine inoculation is neither infectious nor dangerous.

The progreſs of the vaccine inoculation is not always thus uniform; ſometimes the part inoculated has not ſhewn ſigns of the diſeaſe having taken place for upwards of a week; and occaſional inſtances have been known, that a puſtule or two reſembling the vaccine has appeared about or after the time that the original vaccine puſtule has been formed into a dry ſcab, or even fallen off. Whether this laſt circumſtance may not have ariſen from a particle of vaccine matter having been conveyed by the patient's fingers to ſome part of the body, may be ſuſpected; it is however certain, that this ſuper-veſication occaſions no diſeaſe or morbid inconvenience. It has been long believed, that one morbid action will impede that of another, in the

the ſame conſtitution; and perhaps this diſpoſition of the vaccine and variolous inoculation to remain latent, may be occaſioned by ſome other morbid action in the conſtitution; although unknown and unſuſpected. When I practiſed inoculation, I was always deſirous of conveying as ſmall a particle of matter as poſsible under the cuticle, and even preferred the repetition of the operation (ſhould the firſt appear not to have ſucceeded) every three or four days, rather than introducing a large portion of variolous matter at one time. Whether or not this precaution is of real importance I cannot decide, though it has been ſuggeſted, that deep inciſions produce a much larger eruption; but I well recollect inſtances, where I have inoculated three or four times from a ſuſpicion of the preceding operation's having failed; and, at the end of ten, or twelve, or even fourteen days, all the inoculated punctures have ſhewed evidence of having taken the infection, and have ſuppurated nearly in a ſynchronous progreſs; from whence it might be inferred, that ſome latent previous morbid action had impeded that of the vari-

olous, and might in like manner that of the vaccine.

Various methods have been adopted of conveying the vaccine fluid to diſtant parts, in a ſtate of activity: as it is more readily decompoſed than variolous matter, it requires more attention in taking and preparing it for tranſportation. A piece of cotton thread ſhould be effectually moiſtened by the recent fluid; the more of which it imbibes, the more likely to have its powers preſerved; the moiſtened thread ſhould be allowed to dry in the open air, and not by the heat of a fire, leſt it ſhould be decompoſed thereby. When it has acquired a proper ſtate of dryneſs, it may be cloſely rolled up in writing-paper in the form of a ſcroll; and in this ſtate it may be conveyed in a letter or packet, or encloſed in a bottle, or quill. Or the cotton well ſaturated with the vaccine fluid, and carefully dried as above directed, may be ſimply encloſed in a bottle with a glaſs ſtopper.

Another

Another method is, to procure two ſquare pieces of glaſs of equally ſmooth ſurfaces, and to place the vaccine fluid between them, and encloſe the glaſſes in gold-beaters ſkin.

It has been recommended to apply ſealing-wax round the edges of the glaſſes, to exclude the air; and in this manner I tranſmitted vaccine matter to profeſſor Waterhouſe, of Cambridge, near Boſton, in America, which retained its priſtine power unimpaired by the voyage; but from repeated experience, this precaution does not appear to be requiſite, as the matter has been kept between flat glaſſes, without any additional ſecurity, for at leaſt four months in its active ſtate. The ſame has been experienced from a thread moiſtened with the fluid, placed in a quill open at one end, and incautiouſly kept in the pocket, for nearly five months. The vaccine matter taken on a lancet ſoon corrodes the metal, and is itſelf decompoſed, ſo as not to preſerve its active quality, ſo long, and ſucceſsfully, as by the preceding methods of preſerving the fluid; the latter, therefore, is only proper, when it

is to be conveyed in its recent ſtate to another ſubject.

The vaccine matter, which firſt ſucceeded with profeſſor Waterhouſe, was tranſmitted from England, in a bottle with a glaſs ſtopper.

This vaccine matter was afterwards loſt, and there was not a particle on the whole American continent till the beginning of the preſent year; when Dr. Waterhouſe informed me in a letter, dated Cambridge, April 6, 1801, That the vaccine fluid I had tranſmitted had happily communicated the diſeaſe again. "We certainly", ſays the Profeſſor, "loſt the genuine infection in this region, more, I now ſuſpect, by not taking the matter early enough, than by a natural degeneration*."

Dr. Jenner, to whom I related the foregoing ſentence, and who has communicated

* The Profeſſor had formerly entertained ſome doubt, whether the tranſitions of weather on the American continent, or the repeated tranſmiſſion of the vaccine fluid, might not have leſſened its activity.

to

to his coadjutor in vaccine inoculation (my valuable friend, Dr. Waterhouſe), with his uſual liberality, his ample and deciſive ideas on the ſubject, alſo favoured me with the following remarks. "I am extremely obliged to you, for the peruſal of Dr. Waterhouſe's letters; and not a little pleaſed to obſerve that the doctor coincides in opinion with me, reſpecting the ſuppoſed degeneracy of the vaccine matter. If inoculators would be attentive to this (which I lay down as a golden rule in vaccine inoculation), *never to uſe the virus after the formation of the efflorescence around the puſtule*, they never, or ſcarcely ever, would experience diſappointment. I never, in any one inſtance, ſaw a puſtule formed by the virus, taken in this early ſtate of its formation, and transferred immediately to the ſkin of a perſon fully ſuſceptible of its action, that was not properly characterized, in other words, that was ſpurious. How eaſy then is the ſcience of vaccine inoculation! It conſiſts only in the knowledge of the true Cow-pock; the period of taking the virus, and the treat-

treatment of the arm, if it ſhould be ever neceſſary to check redundant inflammation*."

When Dr. Woodville viſited Paris, to introduce there the vaccine inoculation; he took the matter, both on thread encloſed in a bottle with a glaſs ſtopper, and between thin plates of glaſs ſecured from the acceſſion of air, which ſucceeded at Boulogne, as will be hereafter noticed; but the matter, he conveyed to Paris, preſerved under the ſame circumſtances, unfortunately failed. There is a mode of conveying the vaccine fluid, that might be attempted, under the direction of a judicious captain, with great probability of ſucceſs; by inoculating one or two of the ſeamen, or paſſengers, on departing from port, and repeating the proceſs ſucceſſively, ſo as to preſerve the matter freſh throughout the voyage. Thoſe who have had the ſmall-pox would ſuffer little or no inconvenience; and the fluid formed on the inoculated part

* "The beſt application is Aqua Lithargyri Acetata and water.—One part of the former, to five of the latter."

would

would in general produce the deſired effect on one who had not paſſed through the diſeaſe, and thereby a ſource of vaccine matter might afterwards be ſecured.

By the uniform experience of nearly two years, at leaſt with London practitioners, it has been proved, that the vaccine matter neither loſes its original powers, or acquires any new ones, by tranſmiſſion from one human ſubject, that has not had the diſeaſe, to another; though ſome experiments made elſewhere have ſuggeſted an idea, that its efficacy is gradually diminiſhed, and becomes at length inert. The futility of this opinion is now aſcertained; and we know, that the vaccine fluid has been conveyed from one patient to another in ſeventeen hundred ſubjects, in ſucceſſion, with undiminiſhed efficacy; and it is hoped that it will not be deteriorated, or loſe its priſtine virtue, till that dreadful ſcourge the ſmall-pox ſhall have been annihilated. This might be effected in the preſent year, ſhould a due ſenſe of ſelf-preſervation influence the community in general. Should the people

of

of theſe kingdoms be thus actuated, about 36,000 additional inhabitants would be added to its population in the year 1802, and ſo progreſſively every ſubſequent year, till the next century, when the whole gained by the Jennerian diſcovery would amount to about twelve millions of fellow-creatures.

Let it be here recorded to the honour of the medical profeſſors, that they have very generally encouraged this ſalutary practice, although it is certainly calculated to leſſen their pecuniary advantages, by its tendency to extirpate a fertile ſource of profeſſional practice; with a laudable ſpirit, which, whilſt it diſpoſes them to ſacrifice their time and their health, and even to viſit diſtant and inhoſpitable climes, to adminiſter aid to the ſick, actuates them to endeavour to leſſen human miſery, by the prevention of diſeaſe; thus liberally and glorioufly ſacrificing private emolument to the comfort, happineſs, and ſecurity of the public.

When

When the infected thread is to be applied in the proceſs of inoculation, the cuticle, uſually of one arm, ſhould be ſlightly divided, ſo as juſt to afford the appearance of blood, of the length of about one third of an inch, and the ſame extent of thread applied to the inciſion, and kept upon it, by means of adheſive plaſter or bandage, till the next day, when it may be removed, and no farther application admitted. If matter be introduced on the point of a lancet, in its recent ſtate, it ſhould be allowed to dry on the part, and requires neither bandage nor plaſter. If the vaccine matter be taken from plates of glaſs before deſcribed, it may be moiſtened with a particle of water on the point of the lancet, which is to be uſed in inoculation.

Preparative medicines, or a reſtricted diet, have been little attended to, as the Cow-pock is uſually ſo mild as ſcarcely to be called a diſeaſe, or to require either confinement, or medical treatment. The moſt troubleſome circumſtance is the inflammation of the infected arm, and therefore a cool regimen and mild

mild aperient medicines are adviſeable. To the puſtule, if requiſite, may be applied the ſaturnine lotion (page 26. n.). Mercurial ointment has alſo been uſed; and alſo the vitriolic acid has been applied to the puſtule only, on the end of a probe, and in half a minute afterwards waſhed off. In a ſtate of inflammation from variolous inoculation, the late Baron Dimſdale adviſed a bliſter to the inflamed part: but it has not been applied under vaccine inoculation; and I imagine it never will be requiſite to have recourſe to any other application, than the Aqua Lithargyri, diluted with five times its quantity of water, which Dr. Jenner informed me, as has been obſerved, are the proportions he adopts. I have known a common bread and milk poultice anſwer every ſalutary purpoſe.

The moment I had finiſhed this page, I received a ſecond letter from Dr. Jenner; the concluſion of which is ſo applicable to the preſent ſubject, and ſo forcibly expreſſed, that I have preſumed upon the kindneſs of my correſpondent by inſerting it here.

"The

"The ſmall-pox rages at this time in the metropolis with deſolating fury. We have the means in our power of ſtopping the calamity:—Why not employ them?

"We perceive as it were our houſes on fire, and with *buckets* in our hands ſtand idly gazing on the flames.

"We bar the door againſt foreign plagues by our laws of quarantine; whilſt the greateſt domeſtic plague that ever infeſted us, is ſuffered to advance without controul. Would it not be wiſe in the Legiſlature to interfere in the cauſe of ſuffering humanity?"

In London and its environs, there are about one million of inhabitants, of whom, 3,000 die annually by the natural ſmall-pox, or about 36,000 in Great Britain and Ireland. The population that might reſult, from their preſervation by the Cow-pock, would probably re-people theſe kingdoms every century, or give exiſtence to twelve millions of human beings! What a glorious reflection to my friend, who has been the means of preſerving more

more lives than ever fell to the lot of any other human being!

It was natural to ſuppoſe, that a practice ſo highly ſalutary would ſoon gain the attention of the profeſſors of a liberal ſcience like that of medicine; and accordingly my eſteemed friend Dr. Woodville, who had cultivated no department of ſcience without improving and elucidating it, and who had ſecured by his writings, and by his practice in the hiſtory of the ſmall-pox, and of inoculation, the higheſt reputation, early availed himſelf of the opportunities, which his ſituation as phyſician to the hoſpitals for the ſmall-pox and inoculation afforded; and communicated to the public his extenſive experience of the vaccine inoculation.

His reputation in this department being generally known, he procured permiſsion to viſit France, and introduced this ſalutary practice in its metropolis; the following account of which was publiſhed here, and the particulars were even deemed of ſufficient impor-

W. Woodville M.D.

importance to be inſerted in the National Inſtitute of France.

" DR. WOODVILLE began the vaccine inoculation upon three children at Boulogne, where he firſt landed on his tour to Paris, and placed them under the care of Dr. Nowell, an Engliſh phyſician, who was deſired to ſend vaccine matter upon lancets to Paris, as ſoon as the arms of thoſe children produced a ſufficient quantity for the purpoſe. This precaution proved to be very fortunate; for, five days afterwards, when the matter of the ſame pock was tried at Paris, it produced no effect whatever; and the Cow-pock, which Dr. Thouret had received from Geneva, and which had not been longer than four or five days upon the thread, was found to be equally incapable of producing the diſeaſe. As Reaumur's thermometer at Paris was, about that time, frequently about 29 degrees, or above 96 of Fahrenheit, it was concluded, that theſe fail-

lures afforded a proof, that the vaccine matter does not preſerve its efficacy ſo long during hot, as during temperate or cold weather *. The diſappointment from the above trials was not, however, of long continuance. The inoculation at Boulogne ſucceeded; and from them Dr. Woodville was ſupplied with matter at Paris, which fully anſwered his expectation. Dr. Colon's only child was the firſt perſon inoculated in this city; and other medical men, in order to teſtify the confidence they placed in the new inoculation, followed the example; ſo that Dr. Woodville had the ſatisfaction to ſee the practice extended, not only amongſt the children in different hoſpitals, but alſo in private families in Paris, where, no doubt, it will ſoon become general. At Boulogne, the Cow-pock inoculation has been continued by Dr. Nowell, who lately tranſmitted to Paris a report of the numbers to whom he had communicated the infection. With the vaccine

* By the modes already mentioned of preſerving the vaccine fluid, any inconvenience in future may be avoided.

matter

matter which Dr. Pearſon ſent to Paris, thirty children had been inoculated, of whom ten took the diſeaſe; from theſe ten, only five others were infected, when all farther attempts to propagate the Cow-pock entirely failed, and the *matter* was loſt ſeveral weeks before Dr. Woodville's arrival at Paris.

In addition to his valuable treatiſe on Vaccine Inoculation, he has more fully elucidated ſome circumſtances, which experience enabled him to do, in the following judicious remarks printed in the Medical and Phyſical Journal.

"AS the inoculation of the Cow-pock is known to be conducted upon a very extenſive ſcale at the Inoculation hoſpital, and as the advantages which this new practice poſſeſſes, are only to be learned from experience, I have hitherto judged it proper, from time to time, to furniſh the public, not only with

the general reſults, but with moſt of the principal facts that have occurred to me in the propagation of this diſeaſe.—It appears, from my laſt publication on this ſubject, written about ſix months ago, that the number of perſons who had then received the vaccine infection at the hoſpital exceeded 2500; ſince that time upwards of 1500 have been inoculated for the Cow-pock at the ſame place, and of theſe I have a report to preſent ſimilar to that ſtated by me in July laſt, viz. "With none of the patients did the infection occaſion a ſevere diſorder, or excite one alarming ſymptom."—The number of puſtular caſes under the vaccine inoculation, in the hoſpital, has been even leſs than three or four out of an hundred, the proportion in which ſuch caſes were ſtated to occur at the period above mentioned. Reſpecting thoſe to whom I have communicated the infection out of the hoſpital, or among my private patients, I have not yet met with one inſtance in which variolous-like puſtules took place. Indeed, I am convinced an eruption of that appearance will be found to be a very rare occurrence, unleſs,

unleſs, previouſly to the vaccine inoculation, or during its local progreſs, the patient has been expoſed to the action of variolous matter. Though ſuch an expoſure may not have been known, nor even ſuſpected to have taken place, yet this will not be deemed an objection of much weight againſt the opinion here advanced, when it is conſidered that the ſame obſervation will apply to four-fifths of all who caſually receive the ſmall-pox.—If a perſon, who has been expoſed to the contagion of the ſmall-pox for four or five days, be then inoculated for this diſeaſe, the inoculation anticipates, or prevents, the effects of the contagion, and the inoculated ſmall-pox is produced. But, if the vaccine inoculation be employed in a caſe thus circumſtanced, the ſmall-pox is not prevented, although the tumour produced by the inoculation advance to maturation. Hence we are to expect, that the caſual ſmall-pox will more often ſupervene to the vaccine than to the variolous inoculation.

" It was not before the commencement of the preſent year, that I aſcertained the Cow-pock had not the power of ſuperſeding the ſmall-pox; for though, from the firſt trials I made of the new inoculation, it appeared that theſe diſeaſes, as produced in the ſame ſubject from inoculation, did not interrupt the progreſs of each other, yet as the caſual does not act in the ſame manner as the inoculated ſmall-pox, and may be anticipated by the latter, I thought it ſtill probable that the Cow-pock infection might have a ſimilar effect. Numerous facts have, however, proved this opinion to be unfounded, and that the variolous effluvia, even after the vaccine inoculation has made a conſiderable progreſs, have, in ſeveral inſtances, occaſioned an eruption reſembling that of the ſmall-pox. This latter effect of the ſmall-pox I did not conceive to be poſsible, till after I had made repeated trials of the new inoculation out of the hoſpital; nor is the fact to be eaſily explained, when it is conſidered, that the vaccine inoculation imparts its effects to the conſtitution in a ſhorter time

time than the latent period of variolous infection, which is commonly from the eleventh till the fourteenth day.

" In thoſe caſes of vaccine inoculation in which the variolous infection has an early effect, I have obſerved that the tumour at the inoculated part proceeds ſlowly, and never exhibits any efflorescence; the puſtules alſo are more numerous, when they appear early in the diſeaſe, than when they do not appear till after the twelfth day of the inoculation.

" From the preceding obſervations we may infer, that in this metropolis, and its vicinity, where the ſmall-pox conſtantly more or leſs prevails, the vaccine inoculation muſt ſometimes be attended with a puſtular eruption, of which it is not the cauſe. But inoculators, not adverting to this, have generally aſcribed the eruption to a variolated ſtate of the Cow-pock matter, with which the patient was inoculated; and the inoculation-hoſpital has been commonly repreſented as the place in which this adulterated matter was generated and ob-

tained. To refute this opinion I adduced ſeveral facts, proving that varioliform puſtules had frequently accompanied the Cow-pock inoculation, though no doubt could be entertained of the genuineneſs or purity of the vaccine matter employed for the inoculation; and alſo a number of experiments, ſufficient to ſhew that the Cow-pock does not *hybridiſe* with the ſmall-pox, but that both diſeaſes continue diſtinct in the ſame patient; of which the following ſingular inſtance may be conſidered as an additional proof.

"About two months ago, a girl, eleven years of age, was admitted into the inoculation hoſpital, where ſhe was inoculated with vaccine matter. Five days afterwards, ſhe was ſeized with the ſymptoms of ſmall-pox, and an eruption of puſtules (about 200) took place. On the 10th day of the inoculation, one of the variolous puſtules appeared diſtinctly within the margin of the vaccine tumour. I charged a lancet with matter taken from the centre of the tumour, and with it inoculated a child, in whom it produced a regular

caſe.

G. Pearson, M.D.
F.R.S. &c.

caſe of Cow-pock. Mr. Wachſel, the apothecary to the hoſpital, who inoculated three children with matter taken from the puſtule in the vaccine humour, found that it communicated the ſmall-pox to all of them.

WILLIAM WOODVILLE.

Ely-Place, Dec. 1800."

AMONG thoſe luminaries of the preſent age who have added luſtre to medical ſcience, Dr. Pearſon is conſpicuous; and happy for the ſtudent it is, that this diſtinguiſhed inſtructor has no leſs inclination to communicative knowledge, than facility in conveying it; and whilſt ſcience laments the premature fate of a Lavoiſier, may it long claim the living prototype in a Pearſon! who, to other benefits conferred on the community, ſucceſſfully exerts his influence in founding and promoting an inſtitution for vaccine inoculation, of which the following is the plan.

INSTI-

INSTITUTION *for the* INOCULATION *of the* VACCINE-POCK, *Golden-Square.*

FOUNDED *December*, 2, 1799.

THOSE who are acquainted with only part of the hiſtory of the ſmall-pox, ſcarcely take into their contemplation more than the advantages of the *inoculated* over the *natural ſmall-pox*, in the points of preſervation of the lives of individuals, and the ſubſtitution of a diſeaſe generally ſlight for a diſeaſe generally ſevere; and ſuch perſons imagine, that the practice of inoculation neither requires, nor is, perhaps, capable of farther improvement: but thoſe who are more extenſively acquainted with the hiſtory of the ſmall-pox know that

that it is productive of a great deal of mischief, notwithstanding the advantages of inoculation—for,

1. Under the best treatment, a certain proportion of persons die in the small-pox; and, although the proportion of deaths to the recoveries may not exceed five out of a thousand patients, the distress occasioned by these fatal cases is more severely felt than when such cases occur in the casual disease: therefore, the substitution of a milder disease will contribute to lessen the distress which would thereby be occasioned.

2. It seems fair to calculate, that, in the inoculated small-pox, one in twenty-five patients undergoes a severe disease.

3. The numerous sources of the small-pox infection now preclude every prospect of extinguishing this disease; and unless inoculation were universally practised, it is most likely that the proportional mortality by the natural small-pox is rather increased than diminished,

miniſhed, in conſequence of the more extenſive diſſemination of the infection by inoculation.

4. In a certain proportion of inoculated caſes of ſmall-pox, deformities of the ſkin are produced, which no practitioner can be anſwerable for preventing in any inſtance. Diſeaſes alſo are frequently excited by inoculation, to which a diſpoſition pre-exiſted in the conſtitution.

5. In particular families, and in particular ſtates of the conſtitution, as in pregnancy, &c. the ſmall-pox is an exceedingly dangerous diſeaſe, even by inoculation. Now, it is manifeſt, from the accounts which have been collected of the diſorder called by the name of the Cow-pock, and particularly from the experience by inoculation of it ſince January laſt, that the hurtful effects of the ſmall-pox above ſtated may be prevented, by ſubſtituting for it the inoculation of the Cow-pock—becauſe,

1. Of

1. Of above four thouſand perſons who have had the inoculated Cow-pock, one only has died *. There is, however, good ground for believing, that the proportional mortality will be even leſs than here ſtated.

2. Not a ſingle well-atteſted inſtance has been produced, among more than 2000 of the above perſons known to have had the inoculated vaccine-pock, and who were ſubſequently inoculated for the ſmall-pox, of this diſeaſe being ſubſequently taken; although many of theſe were alſo expoſed to the infectious effluvia of the natural ſmall-pox. And traditionally, this fact has been eſtabliſhed time immemorial, with regard to the caſual Cow-pock.

3. It may ſafely be affirmed, that the inoculated Cow-pock is generally a much ſlighter diſeaſe than the inoculated ſmall-pox; and that the proportion of ſevere caſes in the latter is to the former as at leaſt ten to one.

* If this fatal caſe be the one that I imagine is alluded to, it could not be referable to the Cow-pock.

4. It

4. It does not appear that the genuine vaccine pock can be propagated like the ſmall-pox, by effluvia from perſons labouring under it. Hence, if the vaccine inoculation ſhould be univerſally inſtituted in place of the ſmall-pox, it is reaſonable to conclude, that this moſt loathſome and fatal malady will be extinguiſhed; and, like the ſweating ſickneſs, plague, certain kinds of leproſy, &c. be known in this country only by name.

5. It does not appear that the vaccine poiſon, like that of the ſmall-pox, can be conveyed ſo as to produce the diſeaſe indirectly from diſeaſed perſons, by adhering to clothes, furniture, bedding, letters, &c. Hence no danger of its propagation in theſe channels is to be apprehended from the univerſal practice of the inoculation of the Cow-pock.

6. It has been found that a perſon, whoſe conſtitution has diſtinctly undergone the vaccine diſeaſe, is in future unſuſceptible of the ſame diſorder. Hence no objection can be made to the new inoculation, as was once urged,

urged, on account of its being believed, that, by the commutation of the ſmall-pox for the vaccine-pock, an eruptive diſeaſe would be introduced, to which the ſame perſon would be repeatedly liable.

7. It does not appear that thoſe who have already gone through the ſmall-pox are ſuſceptible of the vaccine diſeaſe, as was a little time ago believed. Hence no objection can be urged on the ſcore of perſons who have already gone through the ſmall-pox being liable to a new infectious diſeaſe, by the introduction of the vaccine inoculation.

8. Experience ſhews, that there is no reaſon to apprehend the ſmalleſt chance of deformities of the ſkin from the vaccine inoculation.

9. The extenſive practice of the vaccine inoculation in the preſent year, and the accounts of the diſeaſe in the caſual way, do not ſhow that any other diſeaſe will be excited

cited ſubſequently, which is peculiarly imputable to the new practice.

It may be uſeful to add, that the preſent inſtitution is perhaps the beſt imaginable for procuring evidence to inform thoſe who are unacquainted with the new practice; for determining all doubtful points relating to it; and for diſcovering errors: as every caſe will be regiſtered; every new trial be made under the direction of the medical eſtabliſhment belonging to the inſtitution; and the reſults of the practice will be reported to the governors. A farther conſiderable public benefit expected is, that a ſtock of efficacious vaccine matter, free from contamination by the ſmall-pox, will, by this inſtitution, be preſerved for the uſe of the public.

From the above comparative ſtatement, it is manifeſt that it is highly to the intereſt of the Britiſh Public to adopt univerſally the inoculation of the vaccine-pock in place of the ſmall-pox. And that the pooreſt ranks in ſociety may enjoy the benefit of the new inoculation,

culation, the following plan of an inſtitution is ſubmitted to the conſideration of benevolent perſons; confiding, that it will be readily perceived, that, perhaps, no charitable inſtitution ever promiſed to be productive of ſo much benefit at ſo little expence; and that, when the objects are well underſtood, it will receive ſuch aids as are neceſſary to its eſtabliſhment and maintenance.

PLAN.

1. AT a houſe to be called The INSTITUTION FOR THE COW-POCK OR VACCINE INOCULATION, a phyſician and a ſurgeon ſhall attend every Tueſday and Friday, at One o'clock, to examine, inoculate, and preſcribe for the patients; who ſhall attend at the inſtitution at ſuch times as they ſhall be directed by the phyſician and ſurgeon.

2. An apothecary ſhall alſo attend at the ſame time with the phyſician and ſurgeon, to diſcharge the duties of his department.

3. The patients admitted to receive the benefits of the inſtitution ſhall be thoſe who apply with recommendatory letters from the governors.

4. The patients ſhall be ſupplied with proper medicines at the expence of the inſtitution, and, when neceſſary, be attended at their own houſes.

5. Subſcribers of one guinea annually to the inſtitution ſhall be entitled to a right of having two patients conſtantly on the books of the charity; or they ſhall have the ſame right during life, by paying ten guineas at one time. Subſcribers of larger ſums may have the right of having a proportionally greater number of patients conſtantly on the books.

6. The

6. The ſubſcribers are to be called governors; they ſhall poſſeſs the power of tranſacting all the buſineſs relating to the management of the inſtitution in ſuch a manner as ſhall be agreed upon by themſelves.

7. The ſubſcriptions ſhall be employed to defray the expences of the inſtitution.

8. The eſtabliſhment belonging to the inſtitution ſhall conſiſt of a Preſident, ſix Vice-Preſidents, a Treaſurer, and the Governors, beſides the neceſſary medical officers for carrying on the buſineſs which is the object of it.

9. The medical duties are to be diſcharged gratuitouſly by two phyſicians, two conſulting ſurgeons, two ſurgeons, and three viſiting apothecaries. Theſe officers are to be governors.

10. There ſhall be a reſident apothecary, to prepare and diſpenſe medicines; a ſecre-

tary, a collector, a porter, and ſuch other officers as ſhall be found neceſſary.

The Form of a Recommendatory Letter.

I recommend the Bearer
as a proper object for the Benefit of Inoculation at the Cow-Pock Inſtitution.

Applications being frequently made to the inſtitution for vaccine matter, it is deſired that it may be underſtood, that ſuch matter is not warranted, unleſs it be delivered under the ſeal of the inſtitution.

For the benefit of the charity, it has been thought proper that half a guinea ſhall be paid for arming three lancets.

DIREC-

Inſtitution, No. 5, Golden-ſquare, January, 1801.

DIRECTIONS

FOR

THE VACCINE INOCULATION.

1. THE vaccine pock matter being generally, when firſt taken from the veſicle, a thin limpid fluid, it becomes, when dried, ſcarcely viſible, either on *glaſs*, or on the end of a *lancet*, even on a quite new one. If the matter be taken on thread, it will be perceived by the ſtiffneſs of it when dried.

2. If the matter is not uſed immediately on its being taken from the vaccine pock, it will of courſe be dry; and when employed, it ſhould be ſoftened by the ſmalleſt particle of hot water; and to avoid too great dilution,

that ſhould be done by a particle of hot water hanging on the extremity of a needle.

3. The inoculation muſt be performed in the ſame manner as for the ſmall-pox; but it may be uſeful to recommend, that,

4. Matter be inſerted in one place only in each arm, by a very ſmall ſcratch or puncture of the ſkin.

5. One armed lancet ſhould be uſed for only one, or at moſt two punctures.

6. If the infection take, there will be ſeen in the inoculated part, in four days, or leſs, a red ſpot, like a ſmall gnat-bite.—In ſix days there will be generally a very ſmall veſicle.—In nine days, a circular veſicle appears, as large as a pea, often ſurrounded by a ſmall red areola.—In twelve days, the red areola will generally ſurround the veſicle, which then begins to dry, and turn black in the middle.

Between

Between the eighth and eleventh day, a ſlight fever often takes place.

By the fourteenth day, the veſicle is uſually changed into a circular dark brown ſcab, which ſhould by no means be removed, but left to fall off, which it will do in two or three weeks, leaving a pit.

If in four days the gnat-bite appearance be not manifeſt, the inoculation ſhould be repeated.

7. For inoculation, matter may be taken between the ſeventh and thirteenth days, generally; but probably it is moſt efficacious, and is in greateſt quantity, on the ninth and tenth days *.

8. A conſiderable redneſs, like Eryſipelas, ſometimes comes on, and ſpreads over the arm, about the eleventh or twelfth day, which goes off of itſelf commonly in a day or two;

* Dr. Jenner prefers the ſixth or ſeventh day. See pp. 19 and 25.

but cooling applications will often be of ſervice, and never do harm. An emollient poultice ſhould not be applied, except in particular caſes of phlegmonous inflammation.

9. The medical treatment is the ſame as that of the inoculated ſmall-pox.

10. As the vaccine inoculation, as well as the ſmall-pox, produces ſometimes a local affection only, without any perceivable diſorder of the conſtitution, it will be ſafeſt, in doubtful caſes, to re-inoculate the ſubject; and if no local diſeaſe be produced, or only an imperfect veſicle of a few days duration, ſufficient ſecurity will have been obtained by the firſt inoculation.

Note.—It has been thought proper to require half-a-guinea for arming three lancets, or one guinea annually, for ſupplying each practitioner with matter for his own uſe *only*, as often as wanted; the expence of poſtage and porterage being diſcharged by thoſe who apply.

MAN-

MANCHESTER, diſtinguiſhed as much for the ſcience of its citizens as for its amplitude of commerce, has often ſtood prominent in ſuggeſting, and carrying into execution, many uſeful and ſalutary eſtabliſhments. Their recent ADDRESS TO THE POOR, which I ſhall introduce here, affords a pleaſing confirmation of their laudable attention to the intereſts of the community.

"THE experience of ſeveral years has fully proved, that inoculation for the Cow-pock is a certain *preſervative** againſt the ſmall-

* Two families near Manchester have lately inoculated for the Cow-pock many hundreds of the labouring poor, who have all recovered without any ſickneſs to confine them a ſingle day. Twenty of them were afterwards inoculated for the ſmall-pox; for a few days the uſual ſigns of infection were perceived on the arms, but ſoon diſappeared, without communicating the ſmall-pox to any one of the twenty patients on whom this very ſatisfactory experiment was made.

pox;

pox; and is, beſides, ſo mild and ſafe a diſorder, when compared with the inoculated ſmall-pox, that it has been generally introduced among the better informed and more wealthy inhabitants, both of this kingdom and of various parts of Europe. In order, therefore, to impreſs ſtrongly on the minds of the poor the uſefulneſs and ſuperior advantages of this new plan of inoculation, the medical gentlemen belonging to theſe charities have thought it their duty to ſtate, in this public manner, the following obſervations, for the ſerious peruſal of all thoſe poor perſons who feel *proper affection for their offspring*, and who are deſirous of promoting their own intereſt and comfort.

" 1. *Inoculation* for the *Cow-pock* has been practiſed for ſeveral years, with conſtant ſucceſs, in various parts of this kingdom.

" 2. It has never failed to prevent the infection of the natural ſmall-pox.

" 3. It

" 3. It may be communicated with ſafety to perſons of every age and ſex, and at all times and ſeaſons of the year, with equal advantage.

" 4. The Cow-pock is much preferable to the inoculated ſmall-pox, as being a milder and ſafer diſeaſe, and not capable of infecting the perſons living in the ſame family, or even ſleeping in the ſame bed.

" 5. It does not produce eruptions, which ſcar and disfigure the face; and is ſeldom, if ever, attended with any other marks of the diſeaſe, than what appear on the arms from inoculation.

" 6. Neither ſwellings, blindneſs, lameneſs, nor any other complaints, which are known frequently to be the conſequences of the natural ſmall-pox, (and ſometimes, though but ſeldom, of the inoculated ſmall-pox) have been obſerved to follow the Cow-pock.

" 7. Alarm-

" 7. Alarming fits frequently ſeize children when ſickening of the ſmall-pox; and while cutting their teeth, this diſorder often proves dangerous: but no ſuch objections lie againſt the Cow-pock.

" 8. So far from proving hurtful, delicate and ſickly children are often improved in health by having paſſed through this complaint.

" 9. Scarcely any remedies or attendance are required for the Cow-pock.

" 10. There is no neceſsity for a courſe of phyſic either before or after inoculation.

" 11. The *time of the parents will not be taken up in attendance upon the ſick*, to the injury of the ſupport of the reſt of the family; and to poor families this is *an object of no ſmall importance.*

" The prejudices of the poor againſt inoculation for the ſmall-pox, by which thouſands

ſands of lives have been annually ſaved, have been often lamented; but if they ſuffer unjuſt prejudices to prevent their laying hold of the advantages now offered to them by the inoculation of the Cow-pock, they will neglect the performance of a duty they owe to themſelves, to their families, and to ſociety at large. For ſurely it is little leſs than criminal to expoſe their helpleſs children to the attack of ſo terrible and fatal a malady as the ſmall-pox, when it may be readily avoided by the inoculation of ſo mild, ſimple, and ſafe a diſeaſe as that of the Cow-pock.

" N. B. All poor perſons, whoſe affection for their families leads them to embrace this favourable opportunity, may have their children inoculated for the Cow-pock, at the hoſpitals and diſpenſaries, from twelve to one in the afternoon, every day in the week, (Sunday excepted) throughout the year. No time ought to be loſt by the poor in freeing their families from the apprehenſion of the ſmall-pox, which daily increaſes both in frequency and malignity throughout this town."

MY

MY eſteemed friends, Dr. WILLAN and Dr. MURRAY, with the judicious Surgeon and Committee of the Public Diſpenſary, have evinced their good ſenſe and philanthropy by the ſubſequent reſolutions, in imitation of the Mancheſter Addreſs to the Poor; and which I hope will be followed by every medical eſtabliſhment in Europe.

PUBLIC DISPENSARY, CAREY-STREET.

At a Meeting of the COMMITTEE, June 9, 1801.

RESOLVED UNANIMOUSLY,

That the Phyſicians and Surgeon of this Charity do inoculate for the COW-POCK *all ſuch perſons as ſhall be recommended by the Governors for that purpoſe; and that they be requeſted to make this Regulation known, as well*

to

to the Governors, as amongſt the Poor within the limits of this Diſpenſary, with ſuch obſervations thereon as they ſhall think proper.

IN purſuance of the above Reſolution, we hereby give notice, that all perſons, deſirous of being inoculated for the Cow-pock, may attend at the Diſpenſary for that purpoſe on any *Tueſday* or *Saturday*, at Twelve o'clock; and we earneſtly recommend the following facts to the conſideration of all whom the ſubject may concern.

No one who has once had the Cow-pock can afterwards take the ſmall-pox. This has been proved in many thouſands of caſes, in which perſons, after having had the Cow-pock, have been inoculated for the ſmall-pox, or have even lived in the ſame room, or lain in the ſame bed, with others covered with that diſeaſe, and yet have not received the infection. This being the caſe, it is better to inoculate with the Cow-pock than the ſmall-pox for two reaſons:

1. Be-

1. Becauſe the Cow-pock is a milder diſeaſe. It occaſions but little pain or fever, and is not followed by any of the painful and dangerous complaints, which are often produced by the ſmall-pox.

2. Becauſe the infection of the Cow-pock cannot be communicated by the breath or perſpiration; whereas there is always danger that a perſon, who has even the inoculated ſmall-pox, will communicate the diſeaſe to others; and in this manner the inoculation of one perſon has often occaſioned the loſs of a great number of lives.

We therefore adviſe all thoſe, who regard the health and life of their children, the ſafety of their friends and neighbours, or the good of the community at large, to avail themſelves of the opportunity now offered to them of preventing, by eaſy and certain means, one of the moſt loathſome and fatal diſeaſes to which the human body is ſubject.

ROBERT WILLAN,
T. A. MURRAY, } *Phyſicians.*
JOHN PEARSON, *Surgeon.*

ON

ON the American continent, inoculation of the ſmall-pox is not very generally encouraged *; perhaps it has been thought, that unleſs the practice were general, it would rather tend to keep up and propagate the diſeaſe; for its ſafety beyond the natural ſmall-pox is indubitably eſtabliſhed. The Cow-pock has no peculiarity ſo different from it,

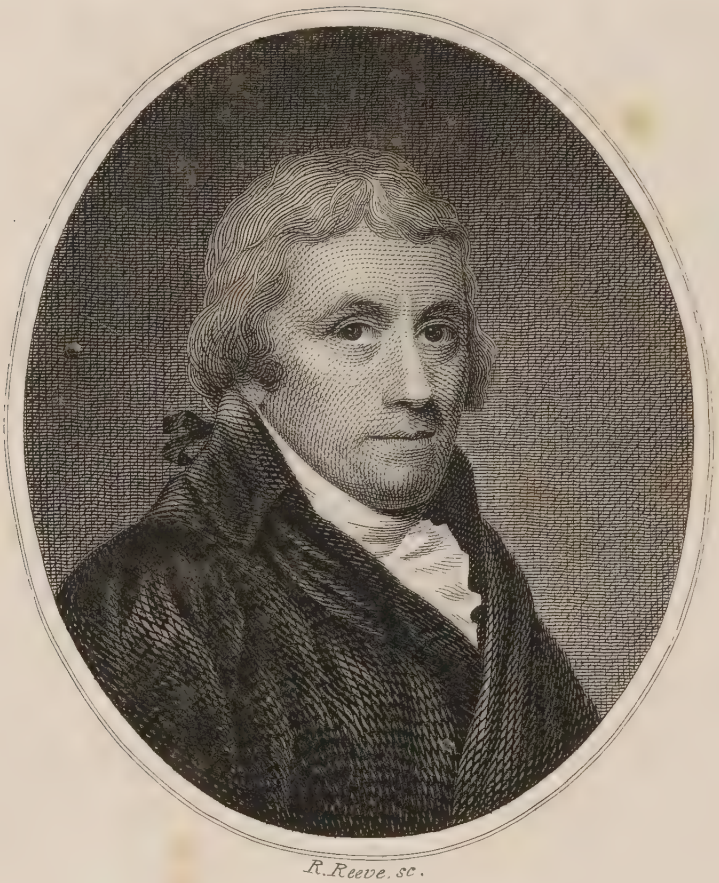
* The Duke de la Rouchefaucault Liancourt, (Travels in America,) ſpeaking of Virginia, he obſerves, "That a law exiſts, which interdicts inoculation for the ſmall-pox without permiſſion from the juſtices, and from all the neighbours within the diſtance of two miles. Any phyſician who ſhould preſume to inoculate without theſe precautions, would be puniſhed by a fine of ten thouſand dollars. Whoever is accidentally attacked by the ſmall-pox is carried to a lonely houſe in the middle of the woods, and there he receives medical aſſiſtance. If the village, the town, the diſtrict, to which he belongs, catch the infection, theſe places are cut off from all communication with the reſt of the country, and are permitted to have recourſe to inoculation: otherwiſe it is never allowed." Monthly Review, N. S. June, 1801, p. 116.

as that of not being infectious, which removes this important objection to inoculation.

My friend Dr. WATERHOUSE, of Cambridge, near Boſton, with a mind equally liberal and well informed, and poſſeſsing an ardent ſpirit of inquiry, which has been ſucceſsfully exerciſed for the honour of his country, and benefit of the community, by his extenſive correſpondence with Europe, was enabled early to avail himſelf of the diſcovery of the Cow-pock, which he introduced into America, and which he has employed with undeviating ſucceſs, as the following relation from his own pen juſtifies; and his countrymen now juſtly hail him their benefactor * as the Jenner of America, an appellation which was firſt applied by phyſicians of this city to their tranſatlantic coadjutor.

* See the letters of the late Preſident Adams, and the preſent, Jefferſon, annexed.

"IN



R. Reeve. sc.

B. Waterhouse, M.D.

Professor of the Theory and Practice of Medicine.

"IN the beginning of the year 1799, I received from my friend Dr. LETTSOM, of London, a copy of Dr. EDWARD JENNER'S "*Inquiry into the Cauſes and Effects of the* VARIOLÆ VACCINÆ, or COW-POCK;" a diſeaſe totally unknown in this quarter of the world. On peruſing this work, I was ſtruck with the unſpeakable advantages that might accrue to this country, and indeed to the human race at large, from the diſcovery of a mild diſtemper that would ever after ſecure the conſtitution from that terrible ſcourge, the ſmall-pox. My attention was not the leſs awakened by a previous impreſsion, that the ſmall-pox came originally from the brute creation; for all that I could recollect of the hiſtory of the famous Mahomet, and his *ſucceſſor*, and of modern Arabia, conſpired to ſtrengthen the idea, that the ſmall-pox came to the human race through the brute creation.

" Perceiving that this diſeaſe began to excite a ſpirit of enquiry among our literary men, I deemed it of importance to collect and examine every thing that had or might be publiſhed on the ſubject, and to acquire, from my coreſpondents in England, every information reſpecting a diſtemper ſo intereſting to humanity.

" As the great queſtion which the profeſſional public were anxious to have reſolved was, *whether a perſon who had been fairly infected with the genuine* COW *or* KINE-POCK, *were thereby ſecured againſt the ſmall-pox*, I bent all my enquiries to aſcertain this point.

" It would be ſuperfluous to mention every queſtion I put, and tedious to relate the different anſwers received. Suffice it for the preſent to ſay, that I made my inquiries of the phyſicians living in different parts of Great Britain, and of thoſe too who were the leaſt ſanguine, although moſt intereſted in the event; of men, who objected much, and believed ſlowly, yet have in the end become its moſt

moſt potent advocates. And I do now deliberately declare, that I have received a crowd of evidence in confirmation of the doctrine, "that the cow or kine-pock renders the human frame unſuſceptible of the ſmall-pox," too great to be reſiſted by any mind not perverted by prejudice. In truth, the ſubject has been traced in England, by thoſe who doubted, until conviction became too ſtrong for argument, and theoretical objections gave way to ſtubborn facts. The conſequence has been, that THIRTY THOUSAND perſons, from two weeks old and upwards, have paſſed ſafely through the diſeaſe. Dr. JENNER has been particularly noticed by the KING, who gave him permiſsion to dedicate the new edition of his book to him.

"But diſtance of ſpace operates on ſome minds like diſtance of time. People are not ſo ready to believe what happened a great while ago, or a great way off. I therefore found it neceſſary to bring the matter home to us, and to repeat in America the experiments performed on the other ſide the At-

lantic. I wiſhed alſo to examine another *important fact*, of which ſome eminent phyſicians in London expreſſed ſome doubts, and which I myſelf was anxious to ſee more firmly eſtabliſhed, namely, *whether this new diſeaſe, this* COW-POCK or KINE-POCK, (denominate it which you will,) *be really not* CONTAGIOUS, *or catching from one perſon to another.* And I do now aſſert, that from all the experiments hitherto made public, it clearly appears, that *this ſubſtitute for the ſmall-pox cannot be communicated by any other means than by the actual* CONTACT OF MATTER; or, in other words, *is not catching from one perſon to another by effluvia, like the ſmall-pox or meaſles.* Even the cows do not convey the diſtemper by effluvia, or when there is a fence or hedge interpoſed between them; and not, ſays Dr. JENNER, unleſs they be handled or milked by thoſe who bring the infectious matter with them.

" Having thus traced the moſt important facts reſpecting the cauſes and effects of the *kine-pock* up to their ſource in England, and having

having confirmed moſt of them by actual experiment in America, one experiment only remained behind to complete the buſineſs. To effect this, I wrote the following letter to Dr. ASPINWALL, phyſician to the *Small-pox Hoſpital* in the neighbourhood of Boſton."

Cambridge, Aug. 2, 1800.

"DEAR DOCTOR,

"YOU have doubtleſs heard of the newly-deſcribed diſorder, known in England by the name of the *cow-pock*, which ſo nearly reſembles the ſmall-pox, that it is now agreed in Great Britain, that the former will paſs for the latter.

"I have collected every thing that has been printed, and all the information I could procure from my correſpondents, reſpecting this diſtemper, and have been ſo thoroughly convinced of its importance to humanity, that

I have procured ſome of the vaccine matter, and therewith inoculated ſeven of my family. The inoculation has proceeded in ſix of them exactly as deſcribed by JENNER and WOODVILLE; but my deſire is to confirm the doctrine by having ſome of them inoculated by you.

"I can obtain variolous matter, and inoculate them privately, but I wiſh to do it in the moſt open and public way poſsible. As I have imported a new diſtemper, I conceive that the public have a right to know exactly every ſtep I take in it. I write this, therefore, to enquire whether you will, on philanthropic principles, try the experiment of inoculating ſome of my children who have already undergone the Cow-pock. If you accede to my propoſal, I ſhall conſider it as an experiment in which we have co-operated for the good of our fellow-citizens, and relate it as ſuch in the pamphlet I mean to publiſh on the ſubject. I am, &c. &c. B. W."

Hon. WILLIAM ASPINWALL, *Eſq.*
Brookline.

"To

" To this letter the Doctor returned a polite anſwer, aſſuring me of his readineſs to give any aſsiſtance in his power, to aſcertain *whether the Cow-pock would prevent the ſmall-pox;* obſerving, that he had at that time freſh matter that he could depend on, and deſiring me to ſend the children to the hoſpital for that purpoſe. Of the three which I offered, the Doctor choſe to try the experiment on the boy of twelve years of age, whom he inoculated in my preſence by two punctures, and with matter taken that moment from a patient who had it pretty full upon him. He at the ſame time inſerted an infected thread, and then put him into the hoſpital, where was one patient with it in the natural way. On the 4th day, the Doctor pronounced the *arm* to be infected. It became every hour ſorer, but in a day or two it dried off, and grew well, without producing the ſlighteſt trace of a diſeaſe; ſo that the boy was diſmiſſed from the hoſpital, and returned home the 12th day after the experiment. One fact, in ſuch caſes, is worth a thouſand arguments."

From

From the PRESIDENT *of the* UNITED STATES *to Dr.* WATERHOUSE.

"*Quincy, Sept.* 10, 1800.

"DEAR SIR,

"I HAVE received, and will communicate to the American Academy of Arts and Sciences, your "*Proſpect of exterminating the ſmall-pox.*"

"I have read your hiſtory of the Kine-pock with great pleaſure. Your zeal and induſtry in giving theſe experiments fair play in America deſerve the thanks of all the friends of ſcience and of humanity.

"To diſarm the ſmall-pox of its contagion is an enterpriſe truly worthy of an HERCULES in medicine. With great regard I am,

"Dear Sir, your obliged friend,

"and humble ſervant,

"JOHN ADAMS."

(Copy.)

Dr. Waterhouſe, Cambridge.

Pre-

Preſident JEFFERSON *to Dr.* WATERHOUSE.

"*Waſhington, Dec.* 25, 1800.

"SIR,

"I RECEIVED laſt night, and have read with great ſatisfaction, your pamphlet on the ſubject of the Kine-pock, and pray you to accept my thanks for the communication of it.

"I had before attended to your publications on the ſubject in the newſpapers, and took much intereſt in the reſult of the experiments you were making. Every friend of humanity muſt look with pleaſure on this diſcovery, by which one evil more is withdrawn from the condition of man; and muſt contemplate the poſsibility, that future improvements and diſcoveries may ſtill more and more leſſen the catalogue of evils. In this line of proceeding *you deſerve well of your country*.

country; and I pray you accept my portion of the tribute due to you, and assurances of high consideration and respect, with which I am, Sir,

"Your most obedient, humble servant,

"THOMAS JEFFERSON."

(Copy.)

Dr. Waterhouse, Cambridge.

CONCLU-

CONCLUSION.

THE vaccine inoculation having been eſtabliſhed by indubitable experience in every quarter of the civilized world, we may now pauſe to conſider, whether or not the variolous inoculation be a juſtifiable practice? Opinions and even prejudices, although ill-founded, which reſult from old habits, ſtrengthened by domeſtic ſenſibility, claim attention, and demand indulgence; for there are many individuals, who ſtill prefer variolous to vaccine inoculation; but allowing due condeſcenſion to theſe feelings and prejudices, can a conſcientious medical practitioner encourage, or give his ſanction, to the old practice, which he knows to be attended with the ſacrifice of at leaſt one victim in five hundred caſes (independent of its injurious effect in propagating the infection); while the modern, by vaccine inoculation, is believed never fatal?

Were

Were parents previouſly informed of the probable proportion of deaths by variolous inoculation, and were it, like the vaccine, incapable of communicating infection to others, ſome apology might be admitted, and the old practice in a great meaſure juſtified; but, if we take into the balance, the dangerous influence of variolous inoculation, by ſpreading infection, and endangering the lives of thoſe who have not had the ſmall-pox, I can hardly conſider a profeſsional man juſtifiable in ſupporting this practice in the preſent period of experience.

At the inſtant of writing this paſſage, a valuable performance *, by my friend Dr. WILLAN, is put into my hands; and one of the firſt pages preſented to my view contains the following obſervation:

"The ſmall-pox and meaſles have prevailed more during this ſpring (Report of April and May, 1798,) than has been known

* Reports of the Diſeaſes in London, particularly during the years 1796, 97, 98, 99, and 1800. London, 1801.

for

for many years paſt. They were diffuſed in the courſe of laſt month (February) through all the villages adjacent to the metropolis. I cannot here paſs over a ſtriking inſtance of the bad effects ariſing from partial inoculation. A child was inoculated in April, whoſe parents kept a ſhop in a court, conſiſting of about twenty houſes. As the inhabitants repaired every day for neceſſary articles to the ſource of infection, the conſequence was, that *ſeventeen* perſons were affected with the ſmall-pox in the natural way, within a fortnight after the child's recovery; and *eight* of them died of the diſeaſe."

What a dreadful mortality of our fellow creatures, of *eight* in *ſeventeen*, is here exhibited! Would not a medical practitioner at this period of improved knowledge be reſponſible for ſo fatal a cataſtrophe? Knowing the indubitable ſafety of the vaccine-pock, it would be his duty to place before the parents, who might ſolicit the variolous infection, the certainty of life on one hand, and the danger of death on the other; and if they refuſed to accept the former,

former, he ought not to be acceſſary to the latter, by acting as the medium of diffuſing the fatal poiſon, unleſs under very particular circumſtances.

What will be the fate of the hoſpitals for the ſmall-pox and inoculation, at Pancras, near London? The vaccine inoculation will gradually ſuperſede the other. Theſe hoſpitals are directed by governors of extenſive information, and ſound obſervation; and under the management of a phyſician of a ſcientific and independent mind, my friend Dr. Woodville, who ſuperior to all ſelfiſh conſiderations, will promote that mode of practice which is moſt conducive to the good of the community at large.

In

In the Preſs, and ſpeedily will be publiſhed by the ſame AUTHOR,

HINTS

DESIGNED TO PROMOTE

BENEFICENCE, TEMPERANCE,

AND

MEDICAL SCIENCE.

IN THREE VOLUMES OCTAVO.

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Sect. III. Hints reſpecting the Society for bettering the Condition, and encreaſing the Comforts of the Poor.

Sect. IV. Hints reſpecting the Society for the Diſcharge and Relief of Perſons impriſoned for Small Debts.

* Sect. V. Hints reſpecting Female Character, and a Repoſitory for Female Induſtry.

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8. Silhouette of James Sims, M. D. Pref. Med. Soc. London. V. P. Phil. Soc. F. S. A. and Pr. Fr. A. Hon. Fellow N. York, and Maſſ. Med. Soc. &c.

9. Silhouette of William Hawes, M. D. Senior Phyſician to the London and Surrey Diſpenſaries, Hon. Memb. Guy's, P. S. Bath A. S.
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Tavern

22. Tavern Feaſt.
23. A Bacchanalian Cup, Wood-print.

*** The whole is deſigned to comprize Thirty-five Eſſays, and Forty-nine Plates and Prints. The Firſt and Second Volumes are printed off; but the Contents of the Third Volume cannot at preſent be ſo accurately aſcertained. A few Copies of the Papers with * prefixed, were printed before, principally to preſent to Friends; and moſt of theſe are conſiderably altered in the preſent Edition.

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